



# *COMMONWEALTH of VIRGINIA*

## *DEPARTMENT OF ENVIRONMENTAL QUALITY* SOUTHWEST REGIONAL OFFICE

L. Preston Bryant, Jr.  
Secretary of Natural Resources

355 Deadmore Street, P.O. Box 1688, Abingdon, Virginia 24212  
(276) 676-4800 Fax (276) 676-4899  
[www.deq.virginia.gov](http://www.deq.virginia.gov)

David K. Taylor  
Director

Dallas Sizemore  
Regional Director

## **COMMONWEALTH OF VIRGINIA STATE AIR POLLUTION CONTROL BOARD**

### **AGREEMENT AND ORDER BY CONSENT**

### **ISSUED TO**

**APPALACHIAN POWER COMPANY a subsidiary of  
AMERICAN ELECTRIC POWER, INC.  
Registration No. 10236**

#### **SECTION A: Purpose**

This is a Consent Agreement and Order issued under the authority of Va. Code §§ 10.1-1301, 1307, 1309, 1316 and 10.1-1184, between the State Air Pollution Control Board and Appalachian Power Company, a subsidiary of American Electric Power, Inc., for the purpose of ensuring compliance with ambient air quality standards, incorporated at 9 VAC 5 Chapter 30, at Appalachian Power Company's Clinch River Facility located in Carbo, Virginia.

#### **SECTION B: Definitions**

Unless the context clearly indicates otherwise, the following words and terms have the meanings assigned to them below:

1. "Va. Code" means the Code of Virginia (1950), as amended.
2. "APCO" means Appalachian Power Company, a subsidiary of American Electric Power, Inc.

3. "Board" means the State Air Pollution Control Board, a permanent collegial body of the Commonwealth of Virginia as described in Va. Code §§ 10.1-1301 and 10.1-1184.
4. "Clinch River Plant" means the electric generating plant owned and operated by APCO, located at the junction of state routes 664 and 665 in Carbo, Virginia. Clinch River Plant is a three unit, 705 MW coal-fired electric generating plant.
5. "Department" or "DEQ" means the Department of Environmental Quality, an agency of the Commonwealth of Virginia as described in Va. Code § 10.1-1183.
6. "Director" means the Director of the Department of Environmental Quality.
7. "NAAQS" means the primary national ambient air quality standards established by the U.S. Environmental Protection Agency for certain pollutants, including sulfur dioxide (SO<sub>2</sub>), pursuant to § 109 of the federal Clean Air Act, 42 USC § 7409, set forth at 40 C.F.R. Part 50 and incorporated at 9 VAC 5 Chapter 30. NAAQS are established at concentrations necessary to protect public health with an adequate margin of safety.
8. "Order" means this document, also known as a Consent Order.
9. "PSD" means prevention of significant deterioration.
10. "QA/QC" means Quality Assurance/Quality Control.
11. "SWRO" means the DEQ Southwest Regional Office located at 355 Deadmore Street in Abingdon, Virginia.
12. "µg/m<sup>3</sup>" means micrograms per cubic meter.
13. "lb/MMBTU" means pounds per million British Thermal Units.
14. "3-hour block average" consists of non-overlapping 3-hour averages, beginning at midnight as described in 40 C.F.R. Part 50.
15. "24-hour block average" is midnight to midnight as described in 40 C.F.R. Part 50.

#### **SECTION C: Findings of Fact and Conclusions of Law**

1. On August 15, 2007, Dominion Virginia Power Company (Dominion) submitted to SWRO a modeling report in support of its PSD Permit application for a new

generating station in southwestern Virginia, which is known as the Virginia City Hybrid Energy Center. The modeling report predicted possible violations of the NAAQS for sulfur dioxide associated with the operation of the APCO Clinch River Plant for sulfur dioxide (SO<sub>2</sub>) emissions from the three units at that plant.

2. On August 2, 2007, a conference call between DEQ and APCO staff was held to discuss the submittal of a modeling protocol to which DEQ provided preliminary guidance and concurrence on specific requirements and/or procedures to follow in developing the modeling protocol and conducting the NAAQS compliance demonstration. Considering the effort to develop the extensive meteorological modeling files and modeling for the Dominion project and the proximity of the Clinch River Plant to the proposed Dominion project site, it was agreed that basing the modeling protocol for the Clinch River Plant on the existing Dominion protocol was appropriate. Dominion also granted authorization to APCO for the release and use of the modeling files developed for its project and APCO used those files as appropriate for its analysis.
3. On August 31, 2007, APCO submitted a modeling protocol to SWRO in support of an air quality assessment of the Clinch River Plant. This protocol described the steps to be taken to conduct air quality modeling of the area around the Clinch River Plant in order to investigate the modeled exceedances in Dominion's PSD permit modeling.
4. On October 17, 2007, the DEQ provided comments on the APCO modeling protocol.
5. Pursuant to those comments, on November 5, 2007, APCO submitted a revised modeling protocol.
6. In order to begin addressing the modeled exceedances of the NAAQS for SO<sub>2</sub>, a Letter of Agreement was signed between APCO and DEQ on December 21, 2007. This Letter of Agreement incorporated dates for the submittal of the modeling analysis, a mitigation plan, and schedule.
7. On January 15, 2008, APCO submitted modeling results to the DEQ. The modeling demonstrated that current actual and allowable SO<sub>2</sub> emissions rates are predicted to result in modeled exceedances of the SO<sub>2</sub> standards and that an SO<sub>2</sub> emission rate of 1.05 lb/MMBTU based on the limiting case of the 24-hour mid-load averaging time, will assure compliance with all applicable short-term and long-term SO<sub>2</sub> NAAQS.
8. On March 31, 2008, APCO submitted to the DEQ a mitigation plan and schedule to eliminate the modeled NAAQS exceedances. The submitted plan included a proposed method to reduce SO<sub>2</sub> emissions at the Clinch River Plant. This

proposal incorporates establishing a new SO<sub>2</sub> emission limitation and obtaining a fuel supply with lower sulfur content than is currently used.

9. On April 25, 2008, DEQ requested by letter that APCO take action necessary to protect the human health and the environment in the area surrounding the Clinch River Plant. The letter discussed how the DEQ and APCO had been working together in an attempt to develop a resolution to this issue by requiring APCO to submit a summary of actions to be taken toward eliminating modeled NAAQS exceedances no later than May 15, 2008.
10. On May 15, 2008, APCO submitted a written response to DEQ's letter, including a summary of the actions taken to date to address the modeled exceedances of the SO<sub>2</sub> NAAQS near the Clinch River Plant.
11. On May 16, 2008, APCO submitted a proposed Ambient Air Quality Monitoring Protocol to DEQ and APCO has retained Shell Engineering to install and operate the monitoring sites to be used prior to completion of the mitigation plan and achievement of the 1.05 lb/MMBtu emission rate necessary to eliminate the modeled exceedances of the NAAQS.
12. On May 16, 2008, APCO submitted an application to DEQ to authorize construction of a coal blending system for the Clinch River Plant.
13. In order to comply with the requirement of state law and regulation, APCO will conduct the activities, described in section D below.

#### **SECTION D: Agreement and Order**

Accordingly, the Board, by virtue of the authority granted it in Va. Code §§ 10.1-1307 D and 10.1-1307.1, orders APCO, and APCO agrees, to perform the actions described in this section of the Order:

1. APCO shall maintain a SO<sub>2</sub> emission rate not to exceed 1.9 lb/MMBTU for a 3-hour block averaging period per stack and not to exceed 1.8 lb/MMBTU for a 24-hour block averaging period per stack until no later than January 1, 2009.
2. APCO will respond to any ambient/meteorological monitor siting information request by the DEQ as soon as practical but no later than ten (10) business days after receipt of the request, unless otherwise agreed by APCO and DEQ.
3. Within twenty (20) days of approval of the Ambient Air Quality Monitoring Protocol, APCO shall begin operation of a minimum of four (4) ambient air quality monitors for SO<sub>2</sub> and a meteorological monitoring station. The monitors

shall be sited in accordance with the criteria set forth in 40 C.F.R. Parts 53 and 58 and any supporting information requested by and supplied to DEQ. Each air monitoring station will house at least one SO<sub>2</sub> analyzer and support equipment to record and report hourly ambient SO<sub>2</sub> concentrations. Of these monitoring stations, two will be in the vicinity of modeled exceedances: one will be representative of a nearby population area, and one will be situated in an upwind (established) direction. In addition, a meteorological monitoring station to record and report hourly wind speed and wind direction (at a minimum) will be located in the area of the Clinch River Plant. This meteorological monitoring station may be co-located with any one of the SO<sub>2</sub> monitors other than the upwind monitor site.

4. It shall be the responsibility of APCO to ensure that the monitors are operated, maintained, and subject to the appropriate QA/QC provisions set forth at Appendix A of 40 C.F.R. Part 58.
5. As a precaution, after the installation of at least four (4) monitors, APCO shall institute additional measures that will apply whenever ambient concentrations of SO<sub>2</sub> are above the Action Threshold, as defined below. Specifically, APCO shall:
  - a. Install a monitor alert system in the Clinch River Plant's operational control room that registers an audible alarm if in any one hour the average measured ambient concentration of SO<sub>2</sub> at any monitor is equal to or greater than 80% of the 3-hour SO<sub>2</sub> Secondary National Ambient Air Quality Standard, measured as 400 parts per billion (1,040 µg/m<sup>3</sup>).
    - (i). During the hour following the sounding of an audible alarm, APCO shall reduce the electrical output on one of the three units at Clinch River Plant to 91 MW or less and shall operate at a SO<sub>2</sub> emission rate as low as practical, not to exceed 1.7 lb/MMBTU for a 3-hour block averaging period per stack. In addition, the monitor that triggered the audible alarm shall be evaluated to ensure that it is operating properly, and APCO shall assess the data collected from all the ambient monitors and the meteorological monitoring station. APCO shall also review the current operating parameters to ensure that the plant is operating consistent with good air pollution control practices. If, at the end of the 3-hour block average following the sounding of the audible alarm, the monitors are operating properly, the plant is operating consistent with good air pollution controls practices, and the ambient concentrations at all monitors measure ambient concentrations of 1,040 µg/m<sup>3</sup> or less, APCO may begin returning the electrical output of the units to the levels required by the system operator.

(ii). If, at the end of the second hour following the sounding of an audible alarm, the average measured ambient concentration of  $\text{SO}_2$  is not equal to or less than  $1,040 \mu\text{g}/\text{m}^3$ , APCO shall reduce the electrical output at all three units at Clinch River Plant to 91 MW or less and shall operate at an  $\text{SO}_2$  emission rate as low as practical not to exceed 1.7 lb/MMBTU for a 3-hour block averaging period per stack and shall maintain the electrical output of the units at this level until such time as all monitors measure a 3-hour block average ambient  $\text{SO}_2$  concentration of  $1,040 \mu\text{g}/\text{m}^3$  or less. If, at the end of the 3-hour block average following the sounding of the audible alarm, the monitors are operating properly, the plant is operating consistent with good air pollution controls practices, and the ambient concentrations at all monitors measure ambient concentrations of  $1,040 \mu\text{g}/\text{m}^3$  or less, APCO may begin returning the electrical output of the units to the levels required by the system operator.

(iii). If at the end of the third hour following the sounding of an audible alarm, the average measured ambient concentration of  $\text{SO}_2$  is not equal to or less than  $1,040 \mu\text{g}/\text{m}^3$ , APCO shall immediately reduce the  $\text{SO}_2$  emissions by a further reduction in electrical output and/or shut down the number of units necessary to reduce the ambient concentration such that it is equal to or less  $1,040 \mu\text{g}/\text{m}^3$ . This operating scenario shall be maintained until such time as all monitors measure a 3-hour block average ambient  $\text{SO}_2$  concentration of  $1,040 \mu\text{g}/\text{m}^3$  or less. If, at the end of the 3-hour block average following the sounding of the audible alarm, the monitors are operating properly, the plant is operating consistent with good air pollution controls practices, and the ambient concentrations at all monitors measure ambient concentrations of  $1,040 \mu\text{g}/\text{m}^3$  or less, APCO may begin returning the electrical output of the units to the levels required by the system operator.

b. APCO shall also configure the audible alarm to sound if, in any 12-hour period, any monitor measures an average, ambient concentration of  $\text{SO}_2$  equal to or greater than 80% of the 24-hour  $\text{SO}_2$  Primary National Ambient Air Quality Standard, measured as 112 parts per billion ( $292 \mu\text{g}/\text{m}^3$ ).

(i). During the following 6 hours, APCO shall reduce the electrical output on the three units at Clinch River Plant to 91 MW or less and shall as expeditiously as possible achieve a  $\text{SO}_2$  emission rate as low as practical on a 24-hour block average. In addition the monitor that triggered the audible alarm shall be evaluated to ensure that it is operating properly, and APCO shall assess the data collected from all the ambient monitors and the meteorological monitoring station. APCO shall also review the current operating parameters to be sure that the plant is operating consistent with good air pollution control practices. If, at the end of the 24-hour block average following the sounding of the alarm the monitors

are operating properly, the plant is operating consistent with good air pollution controls practices, and the ambient concentrations at all monitors measure ambient concentrations of  $292 \mu\text{g}/\text{m}^3$  or less, APCO may begin returning the electrical output of the units to the levels required by the system operator.

(ii). If, at the end of the 6-hour period following the sounding of the audible alarm, the average, measured ambient concentration of  $\text{SO}_2$  is not equal to or less than  $292 \mu\text{g}/\text{m}^3$  at all of the ambient monitors, APCO shall immediately shutdown one unit and continue reduced load on the remaining units until such time as all monitors measure a 24-hour block average ambient  $\text{SO}_2$  concentration of  $292 \mu\text{g}/\text{m}^3$  or less. If, at the end of the 24-hour block average following the sounding of the alarm the monitors are operating properly, the plant is operating consistent with good air pollution controls practices, and the ambient concentrations at all monitors measure ambient concentrations of  $292 \mu\text{g}/\text{m}^3$  or less, APCO may begin returning the electrical output of the units to the levels required by the system operator.

6. The DEQ, SWRO, shall be notified within one (1) business hour each time the audible alarm sounds and APCO shall document its actions in a letter to DEQ that outlines the remedial actions taken within 2 days of each event.
7. If at any time the ambient monitors measure a value in excess of the 3-hour or 24-hour  $\text{SO}_2$  NAAQS, APCO shall immediately reduce the  $\text{SO}_2$  emissions by increased reduction in electrical output and/or shut down the number of units necessary to comply with the NAAQS for the corresponding 3-hour or 24-hour block period averaging period. APCO shall report any exceedance of the NAAQS to the DEQ, SWRO within four (4) business hours of the monitored exceedance. Nothing shall prevent the DEQ from taking any enforcement action necessary to protect the health and welfare of the citizens of the Commonwealth.
8. By January 1, 2009, APCO shall achieve and maintain an actual  $\text{SO}_2$  emission rate of 1.08 lb/MMBTU per stack for a 3-hour block average and 1.05 lb/MMBTU per stack for a 24-hour block average. APCO shall install a coal blending system that will enable the coals to be moved by dozer, dozer trap, and conveyors from the storage piles at Clinch River Plant to the truck dump hopper and conveyors which will blend the coals before going into the units. Quality control measurements will be made by a nuclear coal analyzer which will measure the blended coal supply delivered to the unit bunkers.
9. APCO shall continue to operate the ambient air quality monitors and the meteorological station until December 31, 2009. Upon certification that the conditions of this paragraph have been met, APCO shall provide written

notification to DEQ and thereafter APCO may remove the monitors and discontinue the ambient monitoring required by this Order.

10. Within 30 days of the date of this order APCO shall submit a State Operating Permit Application that requests a SO<sub>2</sub> emission rate of 1.05 lb/MMBTU per stack and pound per hour emission rates that demonstrate modeled NAAQS compliance.

#### **SECTION E: Administrative Provisions**

1. The Board may modify, rewrite, or amend this Order with the consent of APCO for good cause shown by APCO, or on its own motion after notice and opportunity to be heard.
2. This Order addresses only those issues specifically identified herein. This Order shall not preclude the Board or the Director from taking any action authorized by law, including, but not limited to: (1) taking any action authorized by law regarding any additional, subsequent, or subsequently discovered violations; (2) seeking subsequent remediation of APCO as may be authorized by law; and/or (3) taking subsequent action to enforce the terms of this Order. Nothing herein shall affect appropriate enforcement actions by other federal, state or local regulatory authority, whether or not arising out of the same or similar facts.
3. APCO consents to venue in the Circuit Court of the City of Richmond for any civil action taken to enforce the terms of this Order.
4. APCO neither admits nor denies the factual findings or conclusions of law contained herein, but solely for purposes of this proceeding, APCO consents to the jurisdiction of DEQ and the Board, declares it has received fair and due process under the Administrative Process Act, Va. Code §§ 2.2-4000 *et seq.*, and the Air Pollution Control Law, and waives the right to any hearing or other administrative proceeding authorized or required by law or regulation, and to judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial review of, any action taken by the Board or Director to enforce this Order.
5. Except as provided in paragraph 7, below, failure by APCO to comply with any of the terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or the Director as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.



6. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.
7. APCO shall be responsible for failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or other such circumstance. APCO must show that such circumstances resulting in noncompliance were beyond its control and not due to a lack of good faith or diligence on its part. APCO shall notify the Director and the DEQ SWRO within 24 hours, and shall submit a follow-up notice in writing within seven days when circumstances are anticipated to occur, are occurring or have occurred that may delay compliance or cause noncompliance with any requirement of this Order. Such notice shall set forth:
  - a. The reasons for the delay or noncompliance;
  - b. The projected duration of any such delay or noncompliance;
  - c. The measures taken and to be taken to prevent or minimize such delay or noncompliance; and
  - d. the timetable by which such measures will be implemented and the date full compliance will be achieved.

Failure to so notify the Director and the DEQ SWRO, in writing within 24 hours of learning of any condition above, which APCO intends to assert will result in the impossibility of compliance, shall constitute a waiver of any claim of inability to comply with a requirement of this Order.

8. This Order is binding on the parties hereto, their successors in interest, designees, and assigns, jointly and severally.
9. This Order shall become effective upon execution by both the Director of the Department of Environmental Quality or his designee and APCO. Notwithstanding the foregoing, APCO agrees to be bound by any compliance date, which precedes the effective date of this Order.
10. This Order shall continue in effect until the Director or the Board terminates the Order in his or its sole discretion upon 30 days written notice to APCO. APCO may request termination of this Order upon written notice to the Director or the Board that all the provisions of this Order have been satisfied, and appropriate permits have been issued containing the new 1.05 lb/MMBTU emission rate for Clinch River Plant. The Director or the Board shall respond to APCO's notice within sixty (60) days of receipt thereof. Termination of this Order, or any obligation imposed in this Order, shall not operate to relieve APCO from its obligation to comply with any statute, regulation, permit condition, other order.

certificate, certification, standard, or requirement otherwise applicable. APCO shall not begin installation/operation of the coal blending equipment until a permit has been obtained.

11. By signature below, Appalachian Power Company voluntarily agrees to the issuance of this Order.

AND IT IS ORDERED this 21 day of June 2008.

By:

Dallas R. Sizemore

Dallas R. Sizemore, Director  
Department of Environmental Quality  
Southwest Regional Office

Appalachian Power Company voluntarily agrees to the issuance of this Order.

Appalachian Power Company by:

John M. McManus

John M. McManus  
Designated Representative

The foregoing instrument was signed and acknowledged before me in the County of Franklin, State of Ohio, on this 21 day of June 2008 by John M. McManus, Designated Representative for Appalachian Power Company.

Laura Reuther

Notary Public

My Commission expires: 11 May, 2011  
Registration Number: \_\_\_\_\_



LAURA REUTHER  
Notary Public, State of Ohio  
My Commission Expires May 11, 2011  
Recorded in Franklin County